AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A bearing unit for a wheel, comprising:

a stationary ring having a stationary-side raceway surface provided at a stationary-side periphery thereof, and fixedly supported by a suspending apparatus under a condition of being used;

a rotary ring having a rotary side-raceway surface provided at the rotary side-periphery thereof and hardened by a heat treatment;

a plurality of rolling elements provided between the rotary side-raceway surface and the stationary-side raceway surface;

a mounting flange provided at the outer periphery of the rotary ring, for fixedly connecting a rotary body for braking and a wheel to a mounting surface which is one side surface thereof under a condition of being used, said mounting flange having plural mounting holes communicating between the one side surface and the other side surface; and

a plurality of studs, each of which has a distal end protruded from the mounting surface under a condition where the respective base portions thereof are press-fitted into plural mounting holes of the mounting flange, wherein the mounting flange is formed with a concave portion allover the periphery thereof at an intermediate portion in a circumferential direction thereof, and each of the mounting holes opens within the concave portion at one end thereof in the axial direction, wherein the mounting surface of the mounting flange defines a flat surface with a substantially constant surface precision by processing into a predetermined shape, after the rotary side-raceway surface thereof is heat-treated, and the base portion of each stud is fixedly press-fitted into the mounting hole, and before a rolling member is mounted.

~~wherein the mounting flange is formed with a concave portion allover the periphery thereof at an intermediate portion in a circumferential direction thereof, and each of the mounting holes opens within the concave portion at one end thereof in the axial direction.~~

2. (New) A method of forming a bearing unit for a wheel, comprising:

providing a rotary ring having a mounting flange provided at an outer periphery of the rotary ring for fixedly connecting a rotary body for braking and a wheel to a mounting surface, said mounting flange having plural mounting holes communicating between one side surface and another side surface and having a concave portion all over the periphery thereof at an intermediate portion in a circumferential direction thereof, wherein each of the mounting holes opens within the concave portion at one end thereof in the axial direction;

inserting studs into said mounting holes, and press-fitting respective base portions thereof into the plural mounting holes;

forming a rotary side raceway surface at a rotary side periphery of the rotary ring;

hardening the rotary side raceway by a heat treatment;

forming a mounting surface on said mounting flange, wherein said mounting surface defines a flat surface with a substantially constant surface precision, wherein said forming is performed after the rotary side raceway surface is heat-treated, and after the base portion of the studs are fixedly press-fitted into the mounting holes, but before a rolling member is mounted.

3. (New) The method according to claim 2, further comprising finish processing a small diameter stepped portion on said rotary ring, wherein said finish processing a small diameter stepped portion is performed after said forming a mounting surface.

4. (New) The method according to claim 2, further comprising finish processing said rotary side raceway surface on said rotary ring, wherein said finish processing is performed after said forming a mounting surface.